REMARKS

The claims in the application are 1-10, 16 and new Claims 21-27 added by the present amendment.

Favorable reconsideration of the application as amended is respectfully requested.

The claims have been amended to eliminate the formal rejections under 35 U.S.C. § 112, second paragraph, raised in paragraph 3 of the Office Action. Claims 11-15 and 18-20 have been canceled with out prejudice to avoid redundancy while Claims 21-27 have been added herein. All amendments to the claims, in addition to the new claims, find clear support throughout the present application and drawings.

Claims 1-5 have been rejected under 35 U.S.C. §103 as obvious over U.S. Pat. No. 5,416,299 to Tabata et al in view of U.S. Pat. No. 5,834,732 to Innami et al in paragraph 5 of the Office Action, while Claims 16-20 have been rejected as obvious further in view of U.S. Pat. No. 7,220,941 to Niedereder et al in paragraph 6 of the Office Action.

Niedereder et al were patented May 22, 2007 and published November 25, 2004, i.e., after the filing date of November 8, 2004 of the priority PCT application. The PCT application on which Niedereder et al are based was published in German. Therefore, under M.P.E.P.§706.02(f)I.(c)(2), the earliest date Niedereder et al can be applied is the publication date of November 25, 2004, ie., after the filing date of November 8, 2004 of the priority PCT application to the present application.

Accordingly, Niedereder et al cannot be applied against the claims in the present application. Claim 16 has been amended into independent form in this

regard. Should the Examiner subsequently cite WO03/022503 (on which Niedereder et al are based) and apply this reference against the claims, it is respectfully pointed out citation of WO03/022503 must be made in a non-final Office Action.

In any event, it is respectfully submitted the invention as recited in all pending claims herein is patentable over the applied art, for the following reasons (reference will be made to preferred embodiments of the present invention illustrated in the drawings of the present application).

As described in the background portion of the present application, the present invention improves welding application by both spray arc/short arc welding and pulsed welding. Both procedures suffer individual disadvantages, especially when welding vertical V-joints.

The present invention explicitly eliminates these disadvantages by, as recited in independent Claim 1, providing a welding method for gas metal arc welding with continuous electrode feeding, comprising the steps of

conducting short arc and/or spray arc welding,

conducting short pulsing for separating off essentially one droplet per pulse,

alternating cyclically between the short pulsing and the short arc or spray arc welding without intentionally extinguishing the arc in between the pulsing and short arc or spray arc welding, and

pre-programming duration or time for at least one of the pulsing and short arc or spray arc welding prior to beginning the method.

As recited in independent Claim 3, the present invention is also directed to welding power source for MIG/MAG welding comprising

a first process regulator for initiating and controlling short arc and/or spray arc welding,

a second process regulator for initiating and controlling short pulsing for separating off essentially one droplet per pulse,

means for alternating cyclically between the short arc or spray arc welding and pulsing, and

means for pre-programming duration or time of said pulsing and short arc or spray arc welding prior to commencement of welding.

The claimed invention provides excellent results when welding vertical V-joints, with it now being possible to avoid previously-required weaving motion during welding. Need for a backing bar during such welding has been eliminated. Surprisingly, the overall welding procedure is now much more simply carried out. The features of the presently-claimed invention together with the accompanying advantages attained thereby are neither taught nor suggested by the applied art, for the following reasons.

Contrary to the assertion in paragraph 5 of the Office Action, Tabata et al do not show alternating between between short arc and pulse welding. Rather, as disclosed at column 10, lines 42-50, Tabata et al just disclose a single pulse arc welding procedure. Period (2) in Fig. 2(b) of Tabata et al does not denote short-arc welding but rather a short-circuit current supply period should the pulse-current (1) fail. Accordingly, there is no suggestion of even alternating between spray arc/short arc welding and pulsed welding, much less in the controlled manner of the present invention.

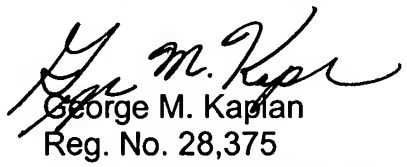
Innami et al therefore fail to add anything to Tabata et al which would render obvious the invention recited in any claim. Furthermore, Innami et al are directed to a specific waveform of providing intermediate lower current, unlike the present invention where the waveform is controlled to "pinch off" droplets at certain time.

The remaining art of record has not been applied against the claims and will not be commented upon further at this time.

Accordingly, in view of the forgoing amendment and accompanying remarks, it is respectfully submitted all claims pending herein are in condition for allowance. Please contact the undersigned attorney should there be any questions. A petition for an automatic two-month extension of time for response under 37 C.F.R. §1.136(a) is enclosed in duplicate together with the requisite petition fee.

Early favorable action is earnestly solicited.

Respectfully submitted,



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